The Corporate Library and Issues Management

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Abstract

The online databases that librarians use routinely in literature searching and current awareness activities might also be used to track the diffusion of ideas and, thus, to identify issues of potential significance to the organization.

Introduction

A number of studies have shown that corporate libraries are frequently underused and the services of the librarian undervalued (Slater's study [1984] may be the most telling of these, but it is not the only one). While the ability to exploit a wide variety of bibliographic and other types of databases in electronic form has given the corporate library much stronger weaponry than it had in the past, there is no real evidence that this has enhanced the image and status of the librarian in most institutions. Moreover, the increasing ability of scientists, engineers, and other professionals to access databases themselves, either online or as CD-ROM, threatens the role of the librarian as an intermediary seeker of information.

Under these circumstances, it is important for the librarian to look for new means of serving the organization. In particular, the librarian should seek ways of exploiting the power of the electronic databases to develop innovative services that managers can recognize as having tangible value. A possible service of this kind is the recognition and tracking of issues of potential significance to the

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corporation—that is, the exploitation of bibliographic resources to support issues management.

Issues management is related to strategic planning and to technological and social forecasting. In essence, an issues management group, within a corporation or other organization, attempts to identify technological or social issues likely to have positive or negative impact on the institution at some future date. That is, it looks for potential threats and opportunities (Jackson & Dutton, 1988). It may also be responsible for recommending a course of action through which the organization can adapt to changing conditions created by a particular issue. One obvious example of "changing conditions" would be legislative or regulatory action affecting its operations, services, or products. In some cases, the organization may actually be able to benefit from the changing conditions. In other cases, it tries to adapt in order to minimize the negative impact of the changing conditions. Clearly, issues management will be most successful if those responsible can identify candidate issues at the earliest possible moment, thus giving the organization time to assess possible outcomes and to initiate necessary actions. Meng (1992) gives a useful example of the importance of identifying issues early. "Holds on deposits" (the refusal of banks to credit deposits until checks clear) became a public concern in 1982 when it was discussed on television and in newspapers, prompting several thousand letters to members of Congress and subsequent House and Senate hearings. An issues analyst at the Bank of America had actually identified this as a potentially important issue as early as 1977, allowing the bank to have some influence on the form of the regulatory action taken.

Stanley (1985) points out that the phrase "managing issues" "became a vogue term in the late 1970s" (p. 3). He regards issues management as a logical outgrowth of "public relations" in the original meaning of that term—i.e., seeking the consent and support of society (pp. 3-5). Heath and Nelson (1986) trace the term "issues management" to the mid-1970s and consider it closely related to "advocacy advertising" (p. 12).

Stanley (1985) talks of the importance of being able to anticipate issues and of having a systematic approach to "scanning" to identify issues likely to have some impact on the organization (pp. 187-88). He recognizes five arenas in which such issues might emerge: economic (i.e., changes in the standard economic indicators); social (e.g., public attitudes); political (e.g., changes in government policies or priorities); technological (e.g., new devices or techniques); and other (e.g., environmental, health, or safety concerns).

The process of scanning is now frequently alluded to as "environmental scanning," and a comprehensive review of the literature on this topic, not restricted to scanning for issues management purposes, has recently appeared (Choo & Auster, 1993).*

One would think that such scanning should involve a substantial literature component—the scanning of the published literature and, more importantly, the semipublished literature (e.g., conference papers and technical reports). However, most organizations seem to downplay the value of literature scanning, preferring direct people-contact approaches, such as focus group interviews, delphi studies, and surveys of opinion leaders. Choo and Auster (1993) point out that: "Impersonal sources, such as the library and online databases, are not often used in scanning" (p. 296).** A report by Keegan (1974) on the scanning practices of multinational corporations notes that none of the organizations in his sample had any formal system for monitoring published literature.

When literature scanning is used in support of issues management, it seems a rather haphazard operation. As described by Stanley (1985), who refers to it as the trend evaluation and monitoring (T.E.A.M.) approach, it involves "volunteer scanners" (p. 189). Each such individual monitors certain publications to look for "trends or discontinuities of potential long-range concern to society..." and to the organization. Relevant items are clipped, copied or abstracted, and reviewed, every so often, by a team charged with producing a trend analysis report for management. Not surprisingly, perhaps, Stanley regards the process as time consuming and error prone.

Some other writers on scanning for issues management purposes are not quite so negative about the literature scanning approach. For example, Culbertson et al. (1993) devote about five pages to what they refer to as "[b]ackground reading with library and computer" (p. 33). While they list quite a few potentially useful published sources, including databases, they do not seem very knowledgeable on how to exploit these resources effectively, referring to this particular approach merely as "browsing." Some other writers (e.g., Ewing, 1987, p. 61) see electronic databases only in terms of refinding items that someone remembers seeing or having in the past.

That the corporate librarian is not considered a particularly valuable player on the issues management team should not come as much of a shock to us. Much more surprising is the fact that,

*The term "environomental scanning" actually predates "issues management." Preble et al. (1988) trace it to Aguilar (1967).

**In actual fact, most of the literature on issues management makes little or no reference to how scanning is achieved.

while librarians and information specialists have no trouble in recognizing the potential value of the corporate library in other scanning activities (e.g., articles on the role of formal information services in "competitive intelligence" appear fairly often), they seem completely oblivious to its potential value in issues management. A search of the *Library and Information Science Abstracts* (LISA) database back to 1969 brought only three hits on the term "issues management"—an article by Lancaster and Lee (1985) and two project descriptions derived from work presented in the 1985 article.

In what way can the corporate library contribute to issues management activities? Most obviously, of course, relevant literature scanning is best performed within the library by professional members of the staff. Indeed, many industrial information services routinely scan vast quantities of incoming literature to prepare an in-house bulletin of abstracts or some other current awareness device. The production of a "trend analysis" report is a logical extension of this function.

Use of Databases to Track Issues

It is in the exploitation of electronic databases that the librarian might best support the issues management function. Once a candidate issue has been identified, perhaps through conventional literature scanning within the library, databases can be used to track the progress of this issue within the literature.

A candidate issue might be considered to have emerged as a "real issue" when one or both of the following occur:

1. There is a sudden dramatic increase in the number of references to the issue in the published literature.
2. The issue moves from one kind of literature to another. In particular, the movement of an idea from the scholarly (or otherwise esoteric) literature to the popular literature, as exemplified by newspapers and popular magazines, is evidence that the issue has come to the attention of the public at large. This implies that the issue is of public interest and possibly of public concern. Some public concerns eventually lead to legislation, regulation, or other official action.

It is clear that databases readily accessible online can be used to track the diffusion of ideas and to identify those in which interest is growing as exemplified by: (1) a great increase in the number of references, (2) a substantial increase in the number of databases in which the idea occurs, or (3) the movement of the idea from a limited-audience literature to a wide-audience literature.

The use of databases in this way is illustrated in the hypothetical example shown in Table 1. The idea, as represented by a particular term, occurs for the first time in database *A*, a pure science database, at time x. By the time $x + 1$ (which could be, say, six months later), not too much has occurred: database *A* records three further occurrences of the term between x and $x + 1$, and the term has moved into a second science database, *D*, with a single occurrence. At $x + 2$, activity is increasing: the topic is diffusing into additional databases, the number of occurrences is increasing, and the topic is recognized for the first time in an applied science database. Interest in the topic continues to grow in the period $x + 3$ to $x + 5$: it is covered in more science databases and more applied science databases, with increasing numbers of occurrences in each, reaches the general public (databases covering newspapers and popular magazines), and has even become a governmental concern (e.g., reached Congressional testimony).

TABLE 1
DIFFUSION OF AN IDEA THROUGH DATABASES (NUMBERS IN CELLS REPRESENT FREQUENCY WITH WHICH A TERM OCCURS IN THE DATABASE)

	Passage of time					
Databases by type	x	$x+1$	$x+2$	$x+3$	$x+4$	$x+5$
Pure science						
A	1	3	12	35	84	157
B			2	12	38	49
C			3	9	23	38
D		1	6	17	31	41
E				4	18	29
Applied science						
F			1	4	7	18
G				2	12	22
H				1	5	11
Popular						
I				1	8	22
J				1	5	17
K						
Governmental						
L						2
M						7

If one had plotted the diffusion of this hypothetical idea through databases accessible online, one might identify it as a potentially important issue at different points in time, depending on what indicator of concern/interest was adopted. At $x + 5$, it is of obvious concern because it is already being discussed in hearings before

Congressional committees—perhaps with a view to some form of legislation or regulatory action. Presumably, all organizations will have recognized the significance of the issue by then. However, one can argue that the potential importance of the issue could have been recognized by $x + 2$ as it spread into more science databases (especially if a number of different sciences are involved) and had reached the applied science literature (e.g., an article describing a possible solution or a possible application), and certainly by $x + 3$, at which time it had passed beyond the more scholarly literature and reached the popular press.

The potential value of this method in the tracking of issues has been demonstrated through a series of case studies, the results of which are summarized in Tables 2-5. In the case of acid rain (Table 2), which was used in a more detailed case study by Lancaster and Lee (1985), the term emerged in databases in 1971. If one's criterion for identifying a potentially important issue was a substantial increase in the number of occurrences of the term, one might not have spotted the acid rain issue before 1980 or 1981. If database involvement was the criterion, one might have been alerted by 1976 when the coverage had extended from one science database to four. However, one might reasonably claim that the issue could have been identified in 1974, by which time it had moved into both the applied science literature (seeking solutions) and the popular literature.

TABLE 2
DIFFUSION OF THE TERM "ACID RAIN"

	Passage of time											
Databases	*1970*	*1971*	*1972*	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*
Pure science												
A	0	1	0	0	0	5	10	13	22	33	72	67
B	0	0	1	0	4	3	10	21	20	25	66	73
C	0	0	1	3	10	14	16	21	34	49	66	199
D	0	0	0	0	1	0	1	2	2	9	17	4
Applied science												
E	0	0	0	0	1	2	3	4	3	5	13	23
Popular												
F	0	0	0	0	1	0	2	4	4	24	29	32
Governmental												
G	0	0	0	0	0	0	1	0	0	3	55	85

Cellular radio (Table 3) presents a different picture. While involvement of multiple databases, or the rapid increase in number of references, would not have flagged this as an important technology

before 1983, the involvement of the popular literature would have done so at least one year earlier.

AIDS could have been identified as a significant concern by 1982 using either movement to the popular literature or frequency of term occurrence as the criterion (Table 4).

TABLE 3.
DIFFUSION OF THE TERM "CELLULAR RADIO"

Databases by type	*Passage of time*											
	1973	*1974*	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*
Pure science												
A	0	1	0	0	0	2	0	1	3	9	39	149
B	0	0	0	0	0	0	0	0	0	0	3	3
C	0	0	0	0	0	0	0	0	0	0	2	1
D	0	0	0	0	0	0	0	0	2	3	3	9
Applied science												
E	0	0	0	0	0	0	0	0	0	1	5	9
Patents												
F	0	0	0	0	0	0	0	0	1	1	2	12
Popular												
G	0	0	0	0	0	0	0	0	2	42	62	68
H	0	0	0	0	0	0	0	0	0	5	23	43

TABLE 4.
DIFFUSION OF THE TERM "ACQUIRED IMMUNE DEFICIENCY OR "ACQUIRED IMMUNODEFICIENCY"

Databases by type	*Passage of time*										
	1974	*1975*	*1976*	*1977*	*1978*	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*
Pure science											
A	0	2	1	0	5	1	2	1	33	643	1163
B	0	0	0	0	0	1	2	3	23	407	934
C	0	0	0	0	0	0	0	0	3	120	157
D	0	0	0	0	0	0	0	0	1	33	77
Popular											
E	0	0	0	0	0	0	0	0	8	78	87
F	0	0	0	0	0	0	0	0	12	80	127
Governmental											
G	0	0	0	0	0	0	0	0	0	6	3

Table 5 shows how the technique can be applied to an issue that is "social" rather than one which is in the science/technology arena. For the sanctuary movement, it is diffusion to the popular

literature that gives the best signal of interest in and concern with this issue.

(Parenthetically, it is worth mentioning that this technique of plotting the movement of terms through databases can be used in database evaluation. For example, in Table 4, note how database *A* picks up the significant term some four to five years before other databases; in the use of cellular radio, database *A* is seven years ahead of other databases.)*

TABLE 5.
DIFFUSION OF THE TERM "SANCTUARY MOVEMENT"

	Passage of time						
Databases by type	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*
Scholarly							
A	0	1	2	9	11	48	52
B	0	0	0	0	0	3	0
C	0	0	0	0	0	6	1
D	0	0	0	0	0	1	0
E	0	0	0	0	0	1	1
F	0	0	0	0	0	1	4
Popular							
G	0	0	0	0	3	67	61

The technique of tracking the diffusion of ideas through databases need not involve the preselection of databases. It can be implemented through the use of database indexes (i.e., databases that reveal term occurrences in other databases). Indeed, the data of Tables 2-5 were extracted from Dialindex.

It is not our claim that the use of databases to track the diffusion of ideas can replace all other methods for the identification of candidate issues. Nevertheless, this form of database tracking can certainly be a powerful weapon in the armory of an individual or group charged with strategic planning or technological/social forecasting.

Of course, the technique does not substitute for human judgment. It does not automatically identify an issue as "significant" to an organization. But it does flag issues that should be looked at more closely or whose progress should be further observed. For example,

*Since this article is not concerned with the evaluation of databases per se, the databases are not identified. The databases vary considerably from case study to case study (e.g., database *A* in Table 3 is not the same as database *A* in Table 4). Moreover, in the interest of simplification, not all databases in which the terms occur are included in the figures, although the most significant ones (in terms of illustrating the technique) are.

the movement of the term "acid rain" into the popular press in 1974 (see Table 2) could have caused some organizations to seek out the item involved. The very provocative way in which the topic was presented ("The Acid Threat," 1974) should have suggested the fact that this might well become an issue of great public concern. The same situation applies to the early references to AIDS in the popular press (see Ver Meuler, 1982).

While the technique described is a powerful tool for tracking the progress of potentially significant issues, it does not contribute directly to the more difficult problem of identifying the ideas to be tracked. Put differently, one can plot the diffusion of "acid rain," "cellular radio," "AIDS," and "sanctuary movement" through the various databases retroactively because one now knows that all of these emerged as, in some sense, significant issues. But how would one have known, for example, that the term "acid rain" should have been tracked from 1971 onward?

Database exploitation could be of even greater value in issues management if the databases could be used to identify automatically the terms that should be tracked. This is not as farfetched as it might seem initially. What is needed is a method for automatically recognizing terms that had never occurred in databases before. Unfortunately, the database indexes, such as Dialindex, are not of much help in their present form because they are based on the occurrence of single words rather than compounds. For example, Dialindex could not be used to identify "acid rain" as a new term in 1971—the number of occurrences of "acid" and of "rain" both increase but "acid rain" does not get into the database.*

Nevertheless, a powerful computer could be used to recognize word combinations that had never before occurred in a particular database, and programs could perhaps be written to automatically eliminate the more obviously nonsensical of these. The remainder could then be reviewed by a planning or forecasting team to identify terms that seem to be worth tracking in one of the database indexes. Certain databases are likely to be particularly valuable in the identification of newly occurring terminology. In science and technology, databases that cover conference papers and technical reports would be obvious candidates. Garfield (1986) has described how the Institute for Scientific Information databases can be used to identify new terminology. While the tool he describes (the *Unique Word Dictionary*) is of some potential value in the identification of significant issues, it is not fully adequate because, again, it is based only on

*Compounds become searchable when they begin to be used as descriptors from a thesaurus or otherwise appear in an index term field in bibliographic records, but this is usually long after the term has occurred in titles or abstracts.

single words and hyphenated compounds and only on words in titles (a completely new term may be more likely to occur in an abstract than in a title).

Conclusion

Writers on issues management consistently undervalue the published and semipublished literature as a source for the identification and tracking of issues. Even when the value of the literature is acknowledged, these writers exhibit woefully inadequate knowledge of the appropriate access tools and how to exploit them. For example, Heath and Nelson (1986) tell us that:

> (we might suggest that one monitoring strategy is to look at standard research guides, such as the *Business Periodicals Index* or the venerable *Reader's Guide to Periodic (sic) Literature,* to note when a topic becomes so well established that it is used to index articles. We can also estimate the extensiveness of discussion by noting the number of articles under a topic and the kinds of publications in which they are printed). (p. 165)

While Heath and Nelson have the correct general idea, their implementation leaves a lot to be desired.

A few mentions of electronic sources do occur in the literature of issues management, but they refer to sources of numerical/statistical data (e.g., economic indicators or census data) rather than of bibliographic data. There is little evidence that the databases used routinely by librarians in their literature searching and current awareness activities have been applied to issues management functions.* Issues management is an arena in which the librarian might well be able to offer significant new services to management.

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*An article by Bower and Hallett (1989) does refer to the American Society for Personnel Management's (now the Society for Human Resource Management) use of "computerized information banks and a proprietary software program" in issues management, but no details are given on the methods used.

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